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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/477,169	01/04/2000	DONALD STERN	CISCP125	8786

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EXAMINER

CAO, DIEM K

ART UNIT	PAPER NUMBER
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2126

DATE MAILED: 12/04/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/477,169

Applicant(s)

STERN, DONALD

Examiner

Diem K Cao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 January 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 January 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____

- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. This Office Action is in response to the application filed on 04 January 2002.
2. Claims 1-25 are presented for examination.

Drawings

3. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-7, 18-20, and 22-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Crick et al. (U.S. 5,781,797).

As to claim 1, Crick teaches determining one or more code modules (component drivers 604-609; col. 5, lines 18-47), a hierarchical order (load table; col. 5, lines 18-47), loading one or more code modules (load each component driver; col. 5, lines 18-47), building a chain (call-down table; col. 5, lines 18-47) connecting the one or more code modules (component drivers 604-609; col. 9, lines 18-47) such that the one or more code modules will automatically execute in the hierarchical order when a first one of the one or more code modules is executed (The system invokes the top layer ... layer component driver; col. 3, lines 34-42).

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As to claim 2, Crick teaches building a chain enables the one or more code module to execute without requiring a parent code module responsible for calling the one or more code module (The system invokes the top layer ... layer component driver; col. 3, lines 34-42).

As to claim 3, Crick teaches the loading step is performed simultaneous with the building step (For each component driver ... configuration or device driver; col. 5, line 49 – col. 6, line 42).

As to claim 4, Crick teaches building a chain is performed such that the one or more code modules can be modified without requiring recompilation of the one or more code modules (The component drivers ... software routines; col. 3, lines 29-31 and col.2, lines 23-31).

As to claim 5, Crick teaches loading the one or more code modules are performed in a reverse order of the hierarchical order (The driver configuration ... last load table entry; col. 5, lines 29-31).

As to claim 6, Crick teaches determining one or more code modules to be executed to complete configuration of a hardware interface (dynamically configures the device drivers; col. 5, lines 18-48).

As to claim 7, Crick teaches determining one or more code modules to be executed to configure a hardware device (disk device; col. 6, lines 28-61).

As to claim 18, Crick teaches associating one of the one or more modules with a hardware interface to identify a starting point for execution upon occurrence of an interrupt (When the application ... device driver; col. 3, lines 15-42 and Fig. 3).

As to claim 19, refer to claims 1 and 6 above for rejection. Crick further teaches comparing the configuration against a set of rules that specify a hierarchical order in which the

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one or more software modules are to be executed in relation to one another (driver configuration routine 601, load table 602; col. 5, lines 18-48).

As to claim 20, refer to claim 18 above for rejection.

As to claims 22 and 25, they are the same as the method claim of claim 1, except they are a computer product claim.

As to claim 23, refer to claim 3 above for rejection.

As to claim 24, refer to claim 4 above for rejection.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 8-9, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crick et al.

As to claim 8, Crick does not explicitly teach the one or more code modules are one or more DLLs. However, Crick teaches the more or more code modules are independent executable software routines (col. 3, lines 29-31). It would have been obvious to implement the code modules of Crick as DLLs.

As to claim 9, it is the same as claim 8.

As to claim 21, Crick does not explicitly teach the hardware device is a router. Crick teaches the hardware device is a disk device as an example. It would have been obvious to

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configure a router using the teaching of Crick because it provides a method to dynamically configure hardware device (summary of the invention).

8. Claims 10-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crick et al. in view of Pickett (U.S. 6,374,400).

As to claim 10, Crick does not explicitly teach obtaining a first one of the one or more code modules, determining whether the first one of the modules is to subsequently execute a second one of the modules upon completion of execution of the first one, when it is determined that the first one is to subsequently execute a second one, updating a branch table associated with the first one to identify an entry point of the second one.

Pickett teaches (col. 3, lines 18-20 and col. 4, lines 13-38) obtaining a first one of the one or more code modules, determining whether the first one of the modules (main code module 50) is to subsequently execute a second one of the modules (code module A) upon completion of execution of the first one, when it is determined that the first one is to subsequently execute a second one, updating a branch table associated with the first one to identify an entry point of the second one (code module information table).

It would have been obvious to apply the teaching of Pickett to the system of Crick because it would provide an information table which automatically learns association data linking various code modules together (col. 2, lines 43-47).

As to claim 11, it is the same as claim 10 except the first module has an option to execute the second module instead of the first module to execute the second module.

As to claim 12, it is the same as claim 10 except the first module can execute the second module instead of the first module to execute the second module.

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As to claim 13, Crick does not explicitly teach the branch table is included in the first one of the code module. Crick teaches the branch table (call-down table) is part of the device driver (col. 4, lines 5-19). It would be obvious the branch table could either included in the first one of the modules or as a separate table because it still has the same functionality.

As to claim 14, Crick teaches updating the branch table includes creating an entry in the branch table that identifies an entry point of the second module (Fig. 8A and col. 6, lines 31-50).

As to claim 15, Crick does not explicitly teach the first one of the modules is shared by two or more chains, associating the second one of the modules with one of the two or more chains. However, Crick teaches each module can be included in several drivers (col. 4, lines 58-67). It would have been obvious that the first one of the modules is shared by two or more chains, and the second one of the module associated with one of the two or more chains.

As to claim 16, Crick does not explicitly teach the second one of the one or more code modules is associated with one or more chains when a parameter is associated with one of the two or more chains. Crick teaches a code module is associated with one or more chains when a parameter is associated with one of the two or more chains (A component driver may have ... call-down table; col. 6, lines 1-7). It would have been obvious that the code module of Crick system could be the second code module.

As to claim 17, Crick does not explicitly teach updating the branch table includes replacing a dummy address with an entry point of the second one of the one or more code modules. Crick teach updating the branch table includes create an entry which point to the second one of the one or more code module (col. 5, lines 49-65). It would have been obvious that

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Crick could create a dummy entry in the table and replace the value because either way the table still has the same functionality.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Cobb (U.S. 5,835,749) teaches "Method and apparatus for providing dynamically linked libraries".
- Krishnan et al. (U.S. 6,141,698) teaches "Method and system for injecting new code into existing application code".
- Hagy et al. (U.S. 6,363,436) teaches "Method and system for loading libraries into embedded systems".

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Diem K Cao whose telephone number is (703) 305-5220. The examiner can normally be reached on Monday - Friday, 9:00AM - 5:00PM.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Any response to this action should be mailed to:
Commissioner of Patents and Trademarks
Washington, DC 20231

Or fax to:

- AFTER-FINAL faxes must be signed and sent to (703) 746-7238.
- OFFICIAL faxes must be signed and sent to (703) 746-7239.
- NON-OFFICIAL/DRAFT faxes should not be signed, please send to (703) 746-7140.

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Diem Cao

November 26, 2002



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